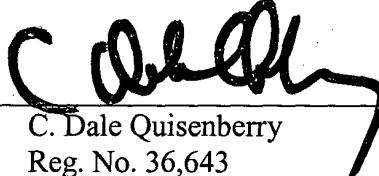


**REMARKS**

This is a divisional of U.S. Patent Application Serial No. 09/933,475. Claims 8-12 are pending. Claims 1-7 and 13-21 have been canceled. It is believe the pending claims are in condition for allowance, an early notice of which is earnestly solicited.

In the event a fee may be required for filing this document, the Commissioner is authorized to charge any such fees to Deposit Account No. 50-2515, Order No. **6264.003/DIV1/CDQ**. If any additional informalities are identified by the Examiner, please contact the undersigned attorney at (832) 778-6000.

Respectfully submitted,



Date: June 18, 2003

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## **RELATED APPLICATIONS**

This is a divisional of application Serial No. 09/933,475, filed July 27, 2001.

## **BACKGROUND OF THE INVENTION**

### **1. Field Of The Invention**

The present invention relates to furnace equipment for use in petrochemical plants, and more particularly, to improved centrifugally-cast tubes for use in such equipment and to a method and apparatus of making such tubes.

### **2. Description Of The Related Art**

It is well known that there are two basic types of furnaces used in petrochemical plants, one being "steam cracker" furnaces, and the other being "steam reformer" furnaces. Steam cracker furnaces are mainly used to make ethylene, and steam reformer furnaces are mainly used to make hydrogen. Both types of furnaces include a number of tubes, generally arranged vertically, that form a continuous flow path, or coil, through the furnace. The flow path or coil includes an inlet and an outlet. In both types of furnaces, a mixture of a hydrocarbon feedstock and steam are fed into the inlet and passed through the tubes. The tubes are exposed to extreme heat generated by burners within the furnace. As the feedstock/steam mixture is passed through the tubes at high temperatures the mixture is gradually broken down such that the resulting product exiting the outlet is ethylene in the case of a steam cracker furnace and hydrogen in the case of a steam reformer furnace.

The petrochemical industry has in the past recognized at least three desirable features in a steam cracker or steam reformer furnace. First, it is important to maximize the heat transfer rate from the furnace burners through the walls of the tubes and into the mixture of hydrocarbons and steam in order to increase the efficiency of the furnace. Second, it is important to make furnace tubes from materials that are resistant to what is known in the metallurgical arts as "creep".